

# Evidence for God from Probability

## The Statistical Probability Argument



### The Power of Probability

Once we know something about math, we can see something powerful about the nature of the universe and life on our planet. The problem is, learning enough about math to understand the power of the evidence! So, let's take some time to examine the nature of probability and statistics.



### Reviewing Basic Mathematics

Before we can understand the power of the Probability Argument for the Existence of God, we are going to need to review some very simple math so we can grasp the issues at hand (and sound really smart in front of our friends)!



#### Odds and Probability

Let's start with something very simple: what are the odds of flipping a quarter and having it land "head's up"? Well, the quarter has two sides, so there is a 50/50 chance that a single flip will produce a "head's up" result. Here's another way to state the problem:



*½ of the quarter's faces are "heads" and ½ of the quarter's faces are "tails"  
There is a 50% / 50% chance of flipping either a "heads" or a "tails"*

No let's make it a bit more interesting. What do you think the odds are of us flipping the quarter TWICE and getting TWO "Head's up" results? This is a little more difficult than getting a single "head's up" result, because in any two flips of the coin, there are four possibilities:

- 1) Heads / Heads
- 2) Heads / Tails
- 3) Tails / Heads
- 4) Tails / Tails

So, how do we calculate something like this? How do we figure the odds of getting two "heads" in a row? Well, one way to see the problem is to create a math problem based on the percentage of sides that are "heads" on each quarter:



Chance of getting “heads” on first flip x Chance of getting “heads” on second flip  
 $\frac{1}{2} \times \frac{1}{2}$

$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

(Since each flip is an independent occurrence)

One half multiplied by one half is one quarter; there is a 25% chance of flipping two “heads” in a row. We simply multiply one probability against the other. Pretty simple, right? OK, so let’s see if you get the idea here. How would we determine the probability of flipping FOUR “heads” in a row? You probably guessed it:



$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{16}$$

### 2 The Nature of Fractions

There is a 1/16th or a 6.25% chance of flipping four “heads” in a row! Now did you notice something here? What happens when the denominator (the bottom part) of a fraction increases in size? When the denominator increases, the number itself actually gets SMALLER. 1/16 is smaller than 1/2! Does that make sense?

### 3 Exponents

OK, we need another math refresher for you before we get to the point of all of this. Let’s talk about exponents. Remember your old high school math? Then this should look familiar:

$$10 \times 10 = 100 \text{ or } 10^1 \times 10^1 = 10^{1+1} = 10^2 \text{ or } 100$$

So,  $10 \times 10 \times 10 \times 10 = 10^1 \times 10^1 \times 10^1 \times 10^1 = 10^{1+1+1+1} = 10^4 \text{ or } 10,000$

Remember that when we multiply numbers with the same BASE but with differing EXPONENTS, we simply ADD the exponents! The same thing happens, even when this exponent occurs in the denominator!

$$\frac{1}{10} \times \frac{1}{100} = \frac{1}{10^1} \times \frac{1}{10^2} = 10^{1+2} = 10^3$$

### 4 Statistical Zero

OK, so let’s put everything we’ve learned together to understand perhaps the MOST IMPORTANT thing to remember and take away from this investigation. It’s important to know that statisticians believe that there is a

fractional threshold that, when reached, means that we are really at what is called “Statistical Zero”. If you have a fraction this small, you are really at zero for all practical purposes. So what is this number that statisticians believe to be ‘Statistical Zero’? Here it is:

This is an important number to remember, because when the odds of something happening reach this number, you can effectively say that there is a ZERO percent chance of it happening at all. That's important to know as we start to examine the probability of life occurring in our universe...



# What Life Requires



OK, now let's take all that math we just learned (or re-learned) and put it to good use. Let's examine the nature of life in the universe. Let's face it; life requires certain universal constants to be in place before it can flourish. There are certain requirements related to the nature of our galaxy and the nature of our planet that must be in place before life can even exist!

Let's look at just one of these requirements. Did you know that the sun is 93 million miles from Earth? Did you know that if our planet was just 15,000 miles closer or farther from the sun, no life could exist on Earth? Now, think about all the different distances that our planet could be from the sun. There are trillions of possibilities in which the planet could be too close, and trillions more that it could be too far! What are the odds that we would be in just the right location? If I were to randomly toss our planet into our solar system, what are the chances that I would place it in the 30,000 mile range that makes life possible to exist? Are the chances one in a million ( $1/1,000,000$  or  $1/10^6$ )? The odds are probably far greater, aren't they? How about one in a trillion ( $1/1,000,000,000$  or  $1/10^9$ )? Let's do something crazy here; let's say that the chances are one in ten. I know that's not possible (it's like saying that we could randomly toss Earth into the Solar System and it would land in the perfect location about one in every ten tosses), but go with me on this for a minute, OK?

The distance from the sun is not the only factor involved in the existence of life here on planet Earth. There are many more universal constants that are required to be perfectly fine-tuned before life can exist. Let's take a look at a PARTIAL list:

## ***Requirements Related to the Universe and Our Galaxy***

## Correct local abundance and distribution of dark matter

## Correct relative abundances of different exotic mass particles

## Correct decay rates of different exotic mass particles

## Correct density of quasars

## Correct density of giant galaxies in the early universe

Correct galaxy cluster size  
Correct galaxy cluster density  
Correct galaxy cluster location  
Correct galaxy size  
Correct galaxy type  
Correct galaxy mass distribution  
Correct size of galactic central bulge  
Correct galaxy location  
Correct variability of local dwarf galaxy absorption rate  
Correct quantity of galactic dust  
Correct giant star density in galaxy  
Correct frequency of gamma ray bursts in galaxy  
Correct star location relative to galactic center  
Correct star distance from co-rotation circle of galaxy  
Correct ratio of inner dark halo mass to stellar mass for galaxy  
Correct star distance from closest spiral arm  
Correct z-axis extremes of star's orbit  
Correct proximity of solar nebula to a normal type I supernova eruption  
Correct timing of solar nebula formation relative to a normal type I supernova eruption  
Correct proximity of solar nebula to a type II supernova eruption  
Correct timing of solar nebula formation relative to type II supernova eruption  
Correct timing of hypernovae eruptions  
Correct number of hypernovae eruptions  
Correct masses of stars that become hypernovae  
Correct flux of cosmic ray protons  
Correct variability of cosmic ray proton flux  
Correct gas dispersal rate by companion stars, shock waves, and molecular cloud expansion in the Sun's birthing star cluster  
Correct number of stars in birthing cluster  
Correct density of brown dwarfs  
Correct number of giant galaxies in galaxy cluster  
Correct number of large galaxies in galaxy cluster  
Correct number of dwarf galaxies in galaxy cluster  
Correct distance of galaxy's corotation circle from center of galaxy  
Correct rate of diffusion of heavy elements from galactic center out to the galaxy's corotation circle  
Correct outward migration of star relative to galactic center  
Correct degree to which exotic matter self interacts  
Correct average quantity of gas infused into the universe's first star clusters  
Correct level of supersonic turbulence in the infant universe  
Correct number and sizes of intergalactic hydrogen gas clouds in galaxy's vicinity  
Correct average longevity of intergalactic hydrogen gas clouds in galaxy's vicinity  
Correct avoidance of apsidal phase locking in the orbits of planets in the planetary system  
Correct number density of the first metal-free stars to form in the universe  
Correct epoch during which the first metal-free stars form in cosmic history  
Correct average circumstellar medium density for white dwarf red giant pairs  
Correct number densities of metal-poor and extremely metal-poor galaxies  
Correct rate of growth of central spheroid for the galaxy  
Correct amount of gas infalling into the central core of the galaxy  
Correct level of cooling of gas infalling into the central core of the galaxy

Correct heavy element abundance in the intracluster medium for the early universe  
Correct rate of infall of intergalactic gas into emerging and growing galaxies during first five billion years of cosmic history  
Correct pressure of the intra-galaxy-cluster medium  
Correct proximity of solar nebula to a type I supernova whose core underwent significant gravitational collapse before carbon deflagration  
Correct timing of solar nebula formation relative to a type I supernova whose core underwent significant gravitational collapse before carbon deflagrataion  
Correct sizes of largest cosmic structures in the universe  
Correct level of spiral substructure in spiral galaxy  
Correct supernova eruption rate when galaxy is young  
Correct zrange of rotation rates for stars are on the verge of becoming supernovae  
Correct quantity of dust formed in the ejecta of Population III supernovae  
Correct chemical composition of dust ejected by Population III stars  
Correct time in cosmic history when the merging of galaxies peaks  
Correct density of extragalactic intruder stars in solar neighborhood  
Correct density of dust-exporting stars in solar neighborhood  
Correct average rate of increase in galaxy sizes  
Correct change in average rate of increase in galaxy sizes throughout cosmic history  
Correct proximity of solar nebula to asymptotic giant branch stars  
Correct timing of solar nebula formation relative to its close approach to asymptotic giant branch stars  
Correct quantity and proximity of gamma-ray burst events relative to emerging solar nebula  
Correct proximity of superbubbles to planetary system during life epoch of life-support planet  
Correct proximity of strong ultraviolet emitting stars to planetary system during life epoch of life-support planet  
Correct quantity and proximity of galactic gamma-ray burst events relative to time window for intelligent life  
Correct timing of star formation peak for the universe  
Correct timing of star formation peak for the galaxy  
Correct mass of the galaxy's central black hole  
Correct timing of the growth of the galaxy's central black hole  
Correct rate of in-spiraling gas into galaxy's central black hole during life epoch  
Correct distance from nearest giant galaxy  
Correct distance from nearest Seyfert galaxy  
Correct amount of mass loss by star in its youth  
Correct rate of mass loss of star in its youth  
Correct rate of mass loss by star during its middle age  
Correct quantity of magnetars (proto-neutron stars with very strong magnetic fields) produced during galaxy's history  
Correct variation in coverage of star's surface by faculae  
Correct ratio of galaxy's dark halo mass to its baryonic mass  
Correct ratio of galaxy's dark halo mass to its dark halo core mass  
Correct galaxy cluster formation rate  
Correct proximity of supernovae and hypernovae throughout history of planet and planetary system  
Correct tidal heating from neighboring galaxies  
Correct tidal heating from dark galactic and galaxy cluster halos  
Correct intensity and duration of galactic winds  
Correct density of dwarf galaxies in vicinity of home galaxy

*Correct amount of photoevaporation during planetary formation from parent star and other nearby stars*

**Requirements Related to the Solar System**

*Correct number and mass of planets in system suffering significant drift*  
*Correct orbital inclinations of companion planets in system*  
*Correct variation of orbital inclinations of companion planets*  
*Correct inclinations and eccentricities of nearby terrestrial planets*  
*Correct in-spiral rate of stars into black holes within parent galaxy*  
*Correct strength of magnetocentrifugally launched wind of parent star during its protostar era*  
*Correct degree to which the atmospheric composition of the planet departs from thermodynamic equilibrium*  
*Correct delivery rate of volatiles to planet from asteroid-comet belts during epoch of planet formation*  
*Correct amount of outward migration of Neptune*  
*Correct amount of outward migration of Uranus*  
*Correct star formation rate in parent star vicinity during history of that star*  
*Correct variation in star formation rate in parent star vicinity during history of that star*  
*Correct birth date of the star-planetary system*  
*Correct number of stars in system*  
*Correct number and timing of close encounters by nearby stars*  
*Correct proximity of close stellar encounters*  
*Correct masses of close stellar encounters*  
*Correct distance from nearest black hole*  
*Correct absorption rate of planets and planetismals by parent star*  
*Correct star age*  
*Correct star metallicity*  
*Correct ratio of 40K, 235,238U, 232Th to iron in star-planetary system*  
*Correct star orbital eccentricity*  
*Correct star mass*  
*Correct star luminosity change relative to speciation types & rates*  
*Correct star color*  
*Correct star rotation rate*  
*Correct rate of change in star rotation rate*  
*Correct star magnetic field*  
*Correct star magnetic field variability*  
*Correct stellar wind strength and variability*  
*Correct short period variation in parent star diameter*  
*Correct star's carbon to oxygen ratio*  
*Correct star's space velocity relative to Local Standard of Rest*  
*Correct star's short term luminosity variability*  
*Correct star's long term luminosity variability*  
*Correct amplitude and duration of star spot cycle*  
*Correct number & timing of solar system encounters with interstellar gas clouds and clouddlets*  
*Correct galactic tidal forces on planetary system*  
*Correct H3+ production*  
*Correct supernovae rates & locations*  
*Correct white dwarf binary types, rates, & locations*  
*Correct structure of comet cloud surrounding planetary system*

Correct polycyclic aromatic hydrocarbon abundance in solar nebula  
Correct mass of Neptune  
Correct total mass of Kuiper Belt asteroids  
Correct mass distribution of Kuiper Belt asteroids  
Correct injection efficiency of shock wave material from nearby supernovae into collapsing molecular cloud that forms star and planetary system  
Correct number and sizes of planets and planetesimals consumed by star  
Correct variations in star's diameter  
Correct level of spot production on star's surface  
Correct variability of spot production on star's surface  
Correct mass of outer gas giant planet relative to inner gas giant planet  
Correct Kozai oscillation level in planetary system  
Correct reduction of Kuiper Belt mass during planetary system's early history  
Correct efficiency of stellar mass loss during final stages of stellar burning  
Correct number, mass, and distance from star of gas giant planets in addition to planets of the mass and distance of Jupiter and Saturn

#### **Requirements Related to Planet Earth**

Correct planetary distance from star  
Correct inclination of planetary orbit  
Correct axis tilt of planet  
Correct rate of change of axial tilt  
Correct period and size of axis tilt variation  
Correct planetary rotation period  
Correct rate of change in planetary rotation period  
Correct planetary revolution period  
Correct planetary orbit eccentricity  
Correct rate of change of planetary orbital eccentricity  
Correct rate of change of planetary inclination  
Correct period and size of eccentricity variation  
Correct period and size of inclination variation  
Correct precession in planet's rotation  
Correct rate of change in planet's precession  
Correct number of moons  
Correct mass and distance of moon  
Correct surface gravity (escape velocity)  
Correct tidal force from sun and moon  
Correct magnetic field  
Correct rate of change & character of change in magnetic field  
Correct albedo (planet reflectivity)  
Correct density density of interstellar and interplanetary dust particles in vicinity of life-support planet  
Correct reducing strength of planet's primordial mantle  
Correct thickness of crust  
Correct timing of birth of continent formation  
Correct oceans-to-continents ratio  
Correct rate of change in oceans to continents ratio  
Correct global distribution of continents  
Correct frequency, timing, & extent of ice ages  
Correct frequency, timing, & extent of global snowball events  
Correct silicate dust annealing by nebular shocks

Correct asteroidal & cometary collision rate  
Correct change in asteroidal & cometary collision rates  
Correct rate of change in asteroidal & cometary collision rates  
Correct mass of body colliding with primordial Earth  
Correct timing of body colliding with primordial Earth  
Correct location of body's collision with primordial Earth  
Correct position & mass of Jupiter relative to Earth  
Correct major planet eccentricities  
Correct major planet orbital instabilities  
Correct drift and rate of drift in major planet distances  
Correct number & distribution of planets  
Correct distance of gas giant planets from mean motion resonances  
Correct orbital separation distances among inner planets  
Correct oxygen quantity in the atmosphere  
Correct nitrogen quantity in the atmosphere  
Correct carbon monoxide quantity in the atmosphere  
Correct chlorine quantity in the atmosphere  
Correct aerosol particle density emitted from the forests  
Correct cobalt quantity in the earth's crust  
Correct arsenic quantity in the earth's crust  
Correct copper quantity in the earth's crust  
Correct boron quantity in the earth's crust  
Correct cadmium quantity in the earth's crust  
Correct calcium quantity in the earth's crust  
Correct flourine quantity in the earth's crust  
Correct iodine quantity in the earth's crust  
Correct magnesium quantity in the earth's crust  
Correct nickel quantity in crust  
Correct phosphorus quantity in crust  
Correct potassium quantity in crust  
Correct tin quantity in crust  
Correct zinc quantity in crust  
Correct molybdenum quantity in crust  
Correct vanadium quantity in crust  
Correct chromium quantity in crust  
Correct selenium quantity in crust  
Correct iron quantity in oceans  
Correct tropospheric ozone quantity  
Correct stratospheric ozone quantity  
Correct mesospheric ozone quantity  
Correct water vapor level in atmosphere  
Correct oxygen to nitrogen ratio in atmosphere  
Correct quantity of greenhouse gases in atmosphere  
Correct quantity of greenhouse gases in atmosphere  
Correct rate of change in greenhouse gases in atmosphere  
Correct poleward heat transport in atmosphere by mid-latitude storms  
Correct quantity of forest & grass fires  
Correct quantity of sea salt aerosols in troposphere  
Correct soil mineralization  
Correct quantity of anaerobic bacteria in the oceans  
Correct quantity of aerobic bacteria in the oceans

Correct quantity of anaerobic nitrogen-fixing bacteria in the early oceans  
Correct quantity, variety, and timing of sulfate-reducing bacteria  
Correct quantity of geobacteraceae  
Correct quantity of aerobic photoheterotrophic bacteria  
Correct quantity of decomposer bacteria in soil  
Correct quantity of mycorrhizal fungi in soil  
Correct quantity of nitrifying microbes in soil  
Correct quantity & timing of vascular plant introductions  
Correct quantity, timing, & placement of carbonate-producing animals  
Correct quantity, timing, & placement of methanogens  
Correct phosphorus and iron absorption by banded iron formations  
Correct quantity of soil sulfur  
Correct ratio of electrically conducting inner core radius to radius of the adjacent turbulent fluid shell  
Correct ratio of core to shell (see above) magnetic diffusivity  
Correct magnetic Reynold's number of the shell (see above)  
Correct elasticity of iron in the inner core  
Correct electromagnetic Maxwell shear stresses in the inner core  
Correct core precession frequency for planet  
Correct rate of interior heat loss for planet  
Correct quantity of sulfur in the planet's core  
Correct quantity of silicon in the planet's core  
Correct quantity of water at subduction zones in the crust  
Correct quantity of high pressure ice in subducting crustal slabs  
Correct hydration rate of subducted minerals  
Correct water absorption capacity of planet's lower mantle  
Correct tectonic activity  
Correct rate of decline in tectonic activity  
Correct volcanic activity  
Correct rate of decline in volcanic activity  
Correct location of volcanic eruptions  
Correct continental relief  
Correct viscosity at Earth core boundaries  
Correct viscosity of lithosphere  
Correct thickness of mid-mantle boundary  
Correct rate of sedimentary loading at crustal subduction zones  
Correct biomass to comet infall ratio  
Correct regularity of cometary infall  
Correct number, intensity, and location of hurricanes  
Correct intensity of primordial cosmic superwinds  
Correct number of smoking quasars  
Correct formation of large terrestrial planet in the presence of two or more gas giant planets  
Correct orbital stability of large terrestrial planet in the presence of two or more gas giant planets  
Correct total mass of Oort Cloud objects  
Correct mass distribution of Oort Cloud objects  
Correct air turbulence in troposphere  
Correct quantity of sulfate aerosols in troposphere  
Correct quantity of actinide bioreducing bacteria  
Correct quantity of phytoplankton

Correct hydrothermal alteration of ancient oceanic basalts  
Correct quantity of iodocarbon-emitting marine organisms  
Correct location of dislocation creep relative to diffusion creep in and near the crust-mantle boundary (determines mantle convection dynamics)  
Correct size of oxygen sinks in the planet's crust  
Correct size of oxygen sinks in the planet's mantle  
Correct mantle plume production  
Correct average rainfall precipitation  
Correct variation and timing of average rainfall precipitation  
Correct atmospheric transparency  
Correct atmospheric pressure  
Correct atmospheric viscosity  
Correct atmospheric electric discharge rate  
Correct atmospheric temperature gradient  
Correct carbon dioxide level in atmosphere  
Correct rates of change in carbon dioxide levels in atmosphere throughout the planet's history  
Correct rates of change in water vapor levels in atmosphere throughout the planet's history  
Correct rate of change in methane level in early atmosphere  
Correct Q-value (rigidity) of planet during its early history  
Correct variation in Q-value of planet during its early history  
Correct migration of planet during its formation in the protoplanetary disk  
Correct viscosity gradient in protoplanetary disk  
Correct frequency of late impacts by large asteroids and comets  
Correct size of the carbon sink in the deep mantle of the planet  
Correct ratio of dual water molecules,  $(H_2O)_2$ , to single water molecules,  $H_2O$ , in the troposphere  
Correct quantity of volatiles on and in Earth-sized planet in the habitable zone  
Correct triggering of El Nino events by explosive volcanic eruptions  
Correct time window between the peak of kerogen production and the appearance of intelligent life  
Correct time window between the production of cisterns in the planet's crust that can effectively collect and store petroleum and natural gas and the appearance of intelligent life  
Correct efficiency of flows of silicate melt, hypersaline hydrothermal fluids, and hydrothermal vapors in the upper crust  
Correct efficiency of ocean pumps that return nutrients to ocean surfaces  
Correct sulfur and sulfate content of oceans  
Correct orientation of continents relative to prevailing winds  
Correct infall of buckminsterfullerenes from interplanetary and interstellar space upon surface of planet  
Correct quantity of silicic acid in the oceans  
Correct heat flow through the planet's mantle from radiometric decay in planet's core  
Correct water absorption by planet's mantle

OK, each requirement on this partial list of universal constants (322 constants listed here) is highly unlikely to occur at random or by chance. In fact, we could assign odds to each requirement in the same way that we assigned odds to the correct location of Earth relative to the Sun. Scientists and experts have already assigned statistic

probabilities for each of these requirements and they range anywhere from 1 in 10 ( $1/10^1$ ) to 1 in 1000 ( $1/10^3$ ). But let's be very generous here. Let's say that each and every one of these terrestrial, solar system and galactic requirement has a 1 in 10 ( $1/10^1$ ) chance of happening naturally; let's assign this 1 in 10 ( $1/10^1$ ) probability to each and every one of these 322 requirements, even though scientists say that the odds are much greater.

Now, do you remember how we calculated the odds of flipping four consecutive “heads” in a row? We took the probability of each flip and multiplied it against each other:  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = 1/16$ . How then, would we calculate the odds of a planet like earth (supporting the life that it supports) existing in our universe? You guessed it; we simply multiply the odds since the events are independent of each and every one of the 322 requirements occurring naturally!

$$1/10^{50} = \text{Statistical Zero}$$

Now look at the (very generous) odds we've just calculated for the existence of a life-bearing planet like Earth existing in a star system like ours and a galaxy like ours:

$1/10^{322} = 10^{272}$  Times Less Likely than Statistical Zero



# It's Statistically Impossible



Do you see the problem here? Based on the statistical probability of the universal constants described here, it's pretty clear that a planet like earth simply should not exist! If natural causes are the only factors involved here, the odds are just prohibitively small. Earth simply cannot exist if natural causes are the only forces in the universe. The ONLY way to account for the Earth's existence is to introduce a supernatural cause that can overcome the tremendous improbability. Here is another way to put it:

## ***The Statistical Probability Argument:***

- 1) Statisticians Agree that When the Probability of an Event Reaches  $1/10^{50}$  the Odds of the Event's Occurrence Are "Statistically ZERO"
- 2) The Odds of the NATURAL Existence of a Life Supporting Planet Like Earth are Less than  $1/10^{322}$  ( $10^{272}$  Times Less Likely than "Statistical Zero"), Yet the Earth Exists and Supports Life
- 3) For This Reason, the Existence of a Life Supporting Planet Like Earth (Which CANNOT Be Attributed to Natural Forces or Causes), Must Be the Result of Supernatural Intervention
- 4) The Supernatural Intervening Cause (God) of Our Universe, Galaxy and Planet Must Exist



## Compelling Statistics (and a Compelling Demonstration)



The odds are pretty long against the 'natural' existence of a life bearing planet like the one we live on. In fact, you can now see exactly how long the odds are! The 'long odds' against our existence are yet another argument for the existence of a supernatural first cause, able to intervene and create a scenario in which life can exist.



If we really take the time to think about it, we can quickly see how unreasonable it would be to assume something is true in spite of the tremendously prohibitive odds against it being true. Let's say that I was to tell you that I was going to repeatedly flip a coin and hope to come up with a sequence of all heads. Let's imagine that I begin by flipping the coin for the first time, and after it lands in my palm, I quickly cover it with the other hand. Then imagine that I take a guarded peek at the coin and announce, "heads" without showing it to you. Then I quickly repeat the process, again guarding the result and announcing, "heads" for a second time (and again without showing the quarter to you). Let's say I continue to do this for ten more flips, each time covering the coin quickly and claiming that I have "heads", but never showing you the result. At some point are you going to stop me and demand to see the coin? At some point are you going to begin to doubt that I have that many consecutive "heads" and demand for me to show you the coin each time I flip it? Why would you begin to get suspicious? Why would you doubt me?

Well, you would be wise to doubt me because you already understand enough about "odds" to know that the chance of my flipping that many "heads" in a row is statistically improbable! Remember our calculations related to the quarter flipping? Well, here is how we would calculate the odds of flipping ten "heads" in a row:

$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{2^{10}} = \frac{1}{1024}$$

There's a one in 1,024 chance of getting ten heads in a row. That's why you were getting so suspicious about my being able to achieve such a feat. You knew the long odds. You knew that it was simply not reasonable to assume that I could beat these odds when the probability was  $1/2^{10}$ ! OK, so if you are suspicious about my telling the truth in this simple example where the probability is  $1/2^{10}$  against my telling the truth, how much more suspicious should you be when someone tells you that the universe and our planet came to support life as the result of purely natural processes when the odds against this truth are  $1/10^{322}$ ? Why is it that you would be quick to doubt me when I claim to flip a quarter the same way ten times in a row, but slow to doubt those who would try to convince you that life exists here on earth as the result of something OTHER than Divine Intervention?

The reality is that the most reasonable inference from the evidence of statistical probabilities is that we live on a planet that shouldn't be here except for the fact that something or someone OUTSIDE the natural realm made it possible for us to be here. The evidence points to a creator God who is able to transcend the 'long odds'.

Have a question about this specific topic? Email our resident expert on statistics (and the source for this article), Mike Olesiuk, [HERE!](#)